

REMARKS

Claims 61 is being amended to more appropriately define the claimed subject matter. Claims 62, 115, 121, and 139-146 are being canceled, without prejudice or disclaimer, for reasons unrelated to patentability. Claims 147, 148, and 149 are being added. Claims 61, 64-113, 116, 119, 120, 122-138, 140-145, and 147-149 remain pending in this application, of which claims 61, 101-108, and 147-149 are presented for examination, and claims 64-100, 109-113, 116, 119, 120, 122-138 have been withdrawn from consideration.

In the final Office Action mailed May 30, 2007¹, claims 61, 101, 102, 105-107, 115, 139, 140, and 143-145 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 6,765,950 to Nuytkens et al. ("*Nuytkens*") in view of U.S. Patent No. 6,636,551 to Ikeda et al. ("*Ikeda*"); claims 103 and 141 were rejected under § 103(a) as unpatentable over *Nuytkens* in view of *Ikeda* and in further view of U.S. Patent No. 4,840,602 to Rose ("*Rose*"); and claims 104 and 142 were rejected under § 103(a) as unpatentable over *Nuytkens* in view of *Ikeda*, in further view of *Rose*, and in further view of U.S. Patent No. 5,314,336 to Diamond et al. ("*Diamond*").

¹ The Office Action contains a number of statements reflecting characterizations of the related art and the claims. Regardless of whether or not any such statement is identified herein, Applicant declines to automatically subscribe to any statement or characterization in the Office Action.

In addition, the Examiner objected to claims 108 and 146 as dependent upon a rejected base claim, but allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims (Final Office Action, pg. 11, paragraph 2).

§ 103(a) Rejection of Claims 61, 101, 102, 105-107, 115, 139, 140, and 143-145

Applicant respectfully traverses the rejection of claims 61, 101, 102, 105-107, 115, 139, 140, and 143-145 under 35 U.S.C. § 103(a) as unpatentable over *Nuytkens* in view of *Ikeda*.

The key to supporting any rejection under 35 U.S.C. § 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. Such an analysis should be made explicit and cannot be premised upon mere conclusory statements. MPEP § 2142, 8th Ed., Rev. 6 (Sept. 2007).

“A conclusion of obviousness requires that the reference(s) relied upon be enabling in that it put the public in possession of the claimed invention.” MPEP § 2145. Furthermore, “[t]he mere fact that references can be combined or modified does not render the resultant combination obvious unless the results would have been predictable to one of ordinary skill in the art” at the time the invention was made. MPEP § 2143.01(III) (internal citation omitted). Moreover, “[i]n determining the differences between the prior art and the claims, the question under 35 U.S.C. § 103 is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious.” MPEP § 2141.02(I) (emphasis in original; internal citations omitted).

Claims 61, 101, 102, and 105-107

It would not have been obvious for one of ordinary skill to obtain, from the teachings of *Nuytkens* and *Ikeda*, a toy system comprising an encoder that comprises, inter alia, “a modulator operable either: a) to use the data signal, before being spread by said spreader, to modulate at least one separate periodic carrier signal . . . to form a modulated carrier signal . . .; or b) to use the spread signal to modulate at least one separate periodic carrier signal . . .,” as recited in independent claim 61 (emphasis added). Even the combination of teachings from *Nuytkens* and *Ikeda* that is suggested by the Examiner fails to include the “modulator” recited in claim 61.

Nuytkens discloses a “video system,” illustrated in Figure 1, that includes “a transmitter portion 10, a receiver portion 14 and a decoder portion 18. The transmitter portion 10 includes a video source 22 and the source of the signal to be encoded 26” (col. 6, lines 27-32). “The transmitter portion 10 also includes a code generator 30 which produces a coded signal based upon a spread spectrum technique” (col. 6, lines 43-45). “The code produced by the code generator 30 is one input to a code modulator 34. The other input to the code modulator 34 is the output of the signal source 26. The output of the code modulator 34 is one input to an adder 38 whose other input is the output of the video source 22. The output of the adder 38 is the input to a video transmitter 42 whose output is transmitted by antenna 46 or other appropriate means . . .” (col. 6, lines 48-55).

Nuytkens further discloses an “audio system,” illustrated in Figure 10, that includes a “transmitter 10A, receiver 14A, and decoder 18A [that] are similar to the

transmitter 10, receiver 14, and decoder 18 of the video embodiment shown in FIG. 1, except that in them the video signal 22 has been replaced with an audio signal 22A, the video transmitter 42 has been replaced with an audio transmitter 42A, the TV receiver has been replaced with a radio receiver 56A, the TV screen 60 has been replaced with a speaker 60A; the encoded emissions represented as light rays in FIG. 1 have been replaced with encoded emissions represented as sound waves, and the photodiode 64 has been replaced with a microphone 170.” (Col. 10, lines 46-58.)

Ikeda discloses that “duplication control information is transmitted by superimposing a spread signal in a preset superimposition/non-superimposition pattern or reversal/non-reversal pattern on a video signal” (col. 9, line 65 to col. 10, line 1). “FIG. 3 shows the relationship between the duplication control information superimposed as spectrum spread signals on the video signal and the video signal in the form of spectrums. For example, the duplication control information indicates Never Copy, Copy Once (One Generation), No More Copy or Copy Free as stated above. The information is small in amount and is a low-bit rate, narrow-bandwidth signal as shown in FIG. 3(a).” (Col. 14, lines 14-21.)

The Examiner apparently relies on the teaching in *Ikeda* of generating the narrow-bandwidth signal shown in Figure 3a of *Ikeda* as constituting “modulating” a data signal onto at least one “periodic carrier signal” (Office Action, pg. 6, paragraph 6). The Examiner appears to allege that “placing [the narrowband data signal] at a first frequency as shown in Fig. 3(a) of *Ikeda*” somehow involves a “periodic carrier signal,” as required by claim 61.

However, generating the signal shown in Figure 3a of *Ikeda* does not constitute “us[ing] the data signal . . . to modulate at least one separate periodic carrier signal,” as recited in claim 61 (emphasis added). Figure 3a of *Ikeda* simply shows the amplitude spectrum of an unmodulated (i.e., baseband) data signal. The data signal of *Ikeda* is the “duplication control information” and indicates “Never Copy,” “Copy Once,” “No More Copy,” or “Copy Free” (col. 14, lines 14-19). As discussed in *Ikeda*, this duplication control information is formed by an 8-bit word (col. 10, lines 64-67), although *Ikeda* does not disclose how the baseband data signal is generated from the 8-bit word. Applicant advises that the normal way that one would generate such a low bit rate data signal would be to read out the 8 bits time sequentially from memory at the desired bit rate. This would produce the described baseband data signal, the spectrum of which is shown in Figure 3a of *Ikeda*. However, the generation of the amplitude spectrum shown in Figure 3a of *Ikeda* does not involve any modification of a “periodic carrier signal,” as required by claim 61.

Moreover, it is unclear what alleged “first frequency” the Examiner is referring to in Figure 3a of *Ikeda*. It appears that, by the term “first frequency,” the Examiner may be referring to the frequency of 0 Hz in Figure 3a of *Ikeda*. However, a frequency of 0 Hz is not a “periodic carrier signal” for at least the reason that it is not periodic.

The Examiner further alleges, “the data signal in *Ikeda* is shown [in Figure 3a] in its frequency representation. Each point on the X axis of the graph represents a single, periodic frequency. There are many periodic signals combined to form the signals disclosed by *Ikeda*” (Final Office Action, page 4, paragraph 2). However, Figure 3a of *Ikeda* does not show “single, periodic frequenc[ies]” [sic] as argued by the Examiner,

but rather a continuous spectrum. Applicant respectfully points out that the Examiner's apparent interpretation of the term "periodic" would appear to render the term "periodic" meaningless since every fluctuating signal necessarily includes a spectrum of multiple frequencies when the fluctuating signal is graphed in frequency space. For example, the Examiner's interpretation would apparently lead to the conclusion that a random signal is also a periodic signal because it spans multiple frequencies, even though a random signal is by definition not a periodic signal. One of ordinary skill would understand that a "periodic signal" is a signal that is repetitive in the time domain. If the baseband data signal shown in Figure 3a of *Ikeda* were periodic, then the graph of Figure 3a would show a vertical line at a fundamental frequency and possibly also vertical lines at harmonic frequencies of the fundamental frequency. In between these vertical lines there would not be any signal components. However, the graph in Figure 3a of *Ikeda* clearly does not show any such vertical lines because the data signal in the graph is not periodic.

The Examiner appears to additionally argue that, in Figure 3a of *Ikeda*, "[t]here are many periodic signals combined to form the signals disclosed by *Ikeda*" (Final Office Action, page 4, paragraph 2). However, claim 61 recites "us[ing] the data signal . . . to modulate at least one separate periodic carrier signal" (emphasis added). If a periodic signal is a component of another signal that is not periodic, then clearly that periodic signal is not a "separate" periodic carrier signal.

Nuytkens does not make up for the deficiencies of *Ikeda*. For example, superimposing, in the adder (38) of *Nuytkens*, the output of the code modulator (34) onto the output of the audio source (22A) does not constitute "us[ing] the data signal . . .

to modulate at least one separate periodic carrier signal,” as recited in claim 61 (emphasis added). Rather, the adder (38) simply superimposes (i.e., adds) the spread signal from the output of the code modulator (34) to the audio signal from the output of the audio source (22A). Superimposing this spread signal onto this audio signal adds noise to the audio signal (see, e.g., *Nuytkens*, col. 9, lines 53-67). But one of ordinary skill in the art would understand that this added noise does not “modulate at least one separate periodic carrier signal.”

Moreover, superimposing, in the adder (38) of *Nuytkens*, the spread signal from the output of the code modulator (34) onto the audio signal from the output of the audio source (22A) does not constitute “us[ing] the data signal . . . to modulate at least one separate periodic carrier signal,” as recited in claim 61, because the audio signal of *Nuytkens* cannot be a “periodic” signal. A primary object of *Nuytkens* is to hide the spread signal in the audio signal (see, e.g., col. 1, lines 46-48). *Nuytkens* relies on the spread signal having an amplitude that is lower than that of the audio signal, such that the spread signal is masked by the audio signal. Since the spread signal has a relatively wide bandwidth, the audio signal of *Nuytkens* must also have a wide bandwidth in order to mask the spread signal. However, periodic signals comprise a single frequency (corresponding to the reciprocal of the periodicity) if the periodic signal is a sinusoid, or harmonics thereof if the periodic signal is non-sinusoidal. If the audio signal of *Nuytkens* were a periodic signal, it would not be possible to properly mask the spread signal with the audio signal because the spread signal would include frequencies not contained in the periodic audio signal and these frequencies would be

audible to the human perceiving the transmission. Therefore, the audio signal of *Nuytkens* cannot be a periodic signal.

Thus, the Examiner's proposed combination of *Nuytkens* and *Ikeda* fails to teach or suggest all elements of claim 61. Furthermore, the Examiner has not identified any reason why one of ordinary skill would otherwise modify *Nuytkens* and *Ikeda*, either alone or in combination, to obtain "us[ing] the data signal . . . to modulate at least one separate periodic carrier signal," as recited in claim 61. Since *Nuytkens* and *Ikeda* do not render obvious "us[ing] the data signal . . . to modulate at least one separate periodic carrier signal," as recited in independent claim 61, claim 61 and claims 101, 102, and 105-107, which depend therefrom, are allowable over *Nuytkens* and *Ikeda*.

Claims 115, 139, 140, and 143-145

Claims 115, 139, 140, and 143-145 are being canceled. Thus, this rejection is moot as applied to claim 115, 139, 140, and 143-145.

§ 103(a) Rejection of Claims 103 and 141

Applicant respectfully traverses the rejection of claims 103 and 141 under 35 U.S.C. § 103(a) as unpatentable over *Nuytkens* in view of *Ikeda* and in further view of *Rose*.

Claim 103

The shortcomings of *Nuytkens* and *Ikeda* in relation to independent claim 61 have been discussed above. *Rose* does not make up for the deficiencies of *Nuytkens* and *Ikeda* because *Rose* also fails to teach or suggest "us[ing] the data signal . . . to modulate at least one separate periodic carrier signal," as recited in claim 61 (emphasis

added). The Examiner relies on *Rose* only for the elements recited in dependent claim 103.

Thus, the Examiner's proposed combination of *Nuytkens*, *Ikeda*, and *Rose* fails to teach or suggest all elements of claim 61. Furthermore, the Examiner has not identified any reason why one of ordinary skill would otherwise modify *Nuytkens*, *Ikeda*, and *Rose*, either alone or in combination, to obtain "us[ing] the data signal . . . to modulate at least one separate periodic carrier signal," as recited in claim 61. Since *Nuytkens*, *Ikeda*, and *Rose* do not render obvious "us[ing] the data signal . . . to modulate at least one separate periodic carrier signal," as recited in independent claim 61, claim 103, which depends therefrom, is allowable over *Nuytkens*, *Ikeda*, and *Rose*.

Claim 141

Claim 141 is being canceled. Thus, this rejection is moot as applied to claim 141.

§ 103(a) Rejection of Claims 104 and 142

Applicant respectfully traverses the rejection of claims 104 and 142 under 35 U.S.C. § 103(a) as unpatentable over *Nuytkens* in view of *Ikeda*, in further view of *Rose*, and in further view of *Diamond*.

Claim 104

The shortcomings of *Nuytkens*, *Ikeda*, and *Rose* in relation to claim 61 have been discussed above. *Diamond* does not make up for the deficiencies of *Nuytkens*, *Ikeda*, and *Rose* because *Diamond* also fails to teach or suggest "us[ing] the data signal

. . . to modulate at least one separate periodic carrier signal,” as required by claim 61.

The Examiner relies on *Diamond* only for the limitations recited in dependent claim 104.

Thus, the Examiner’s proposed combination of *Nuytkens*, *Ikeda*, *Rose*, and *Diamond* fails to teach or suggest all elements of claim 61. Furthermore, the Examiner has not identified any reason why one of ordinary skill would otherwise modify *Nuytkens*, *Ikeda*, *Rose*, and *Diamond*, either alone or in combination, to obtain “us[ing] the data signal . . . to modulate at least one separate periodic carrier signal,” as recited in claim 61. Since *Nuytkens*, *Ikeda*, *Rose*, and *Diamond* do not render obvious “us[ing] the data signal . . . to modulate at least one separate periodic carrier signal,” as recited in independent claim 61, claim 104, which depends therefrom, is allowable over *Nuytkens*, *Ikeda*, *Rose*, and *Diamond*.

Claim 142

Claim 142 is being canceled. Thus, this rejection is moot as applied to claim 142.

New Claims 147-149

New claims 147-149 are being added. Claims 147-149 are allowable over *Nuytkens*, *Ikeda*, *Rose*, and *Diamond* for at least the reason that these claims depend from independent claim 61, which is allowable over these references as explained above.

CONCLUSION

In view of the foregoing amendments and remarks, Applicant respectfully requests reconsideration of this application and the timely allowance of the pending claims.

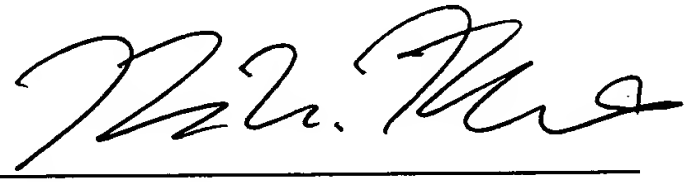
Please grant any extensions of time required to enter this response and charge any additional required fees to our Deposit Account 06-0916.

Respectfully submitted,

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Dated: November 30, 2007

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